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ABSTRACT

In 2000, two Minnesota art museums began the development of statewide networks for training teachers to integrate Internet-based educational tools and resources into their classrooms and teaching techniques. This paper examines the design and implementation of a train-the-trainer program designed to promote the use of www.artsconnected.org (a Web site developed jointly by The Minneapolis Institute of Arts and Walker Art Center) in classrooms across the state of Minnesota. The following goals of the program are presented as a model for teacher training using technology in the 21st Century: (1) create a collaborative laboratory for exploring meaningful classroom applications of online teacher resources; (2) create a community that will sustain the use of online teacher resources throughout Minnesota; (3) build bridges between the cultures of the classroom and the art museum; (4) increase the sophistication of teachers' use of online teacher resources; and (5) expand teachers' use of technology in general. In addition, personal anecdotes and valuable lessons learned through formal evaluation of this program illuminate global issues of interest to all museum educators. (Author/MES)

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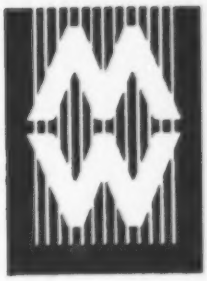

Pyramid Power: A Train-The-Trainer Model To Increase Teacher Usage Of The ArtsConnectEd On-Line Resource

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http://www.artsconnected.org

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Abstract

In 2000, two Minnesota art museums began the development of statewide networks for training teachers to integrate internet-based educational tools and resources into their classrooms and teaching techniques. This paper examines the design and implementation of a train-the-trainer program designed to promote the use of www.artsconnected.org (a Web site developed jointly by The Minneapolis Institute of Arts and Walker Art Center) in classrooms across the state of Minnesota. The goals of the program will be presented as a model for teacher training using technology in the 21st Century: 1) create a collaborative laboratory for exploring meaningful classroom applications of on-line teacher resources; 2) create a community that will sustain the use of on-line teacher resources throughout Minnesota; 3) build bridges between the cultures of the classroom and the art museum; 4) increase the sophistication of teachers' use of on-line teacher resources; and 5) expand teachers' use of technology in general. In addition, personal anecdotes and valuable lessons learned through formal evaluation of this program illuminate global issues of interest to all museum educators.

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Introduction

Two Minnesota art museums have developed a statewide network for training teachers to integrate ArtsConnectEd, an internet-based educational resource, into traditional classrooms and teaching techniques. This paper will examine the design and implementation of a train-the-trainer program designed to promote the use of www.artsconnected.org (a Web site developed jointly by The Minneapolis Institute of Arts and Walker Art Center) in classrooms across the state of Minnesota.

The Evolving Partnership

The partnership between the Education Departments of The Minneapolis Institute of Arts (MIA) and the Walker Art Center began in 1995 when each museum designed catalogues of educational resources for teachers and mailed them together in one envelope. The joint mailing required that the museums collaborate on design so that the catalogues would visually represent the different institutions and fit together at the same time. The

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mailing also required that the museums pool their mailing lists and share mailing costs. The response from the K-12 teaching community in Minnesota was very positive. Teachers expressed the sentiment that finally the two largest art museums in the state had quit competing with each other and had focused together on serving teachers.

As the Web emerged, each museum also made its catalogues available electronically through its Web site. Simultaneously, some of the material listed in the catalogues was being converted for on-line delivery. For example, World Mythologies, a slide set available to rent through the MIA's Classroom Materials Office, was converted for on-line distribution in 1995 (http://www.artsmia.org/mythology). Originally the on-line catalogues and other electronic teaching resources were straight HTML. As interest in these resources grew, so did the desire to make the material searchable. In addition, both museums began to digitize their art collections to participate as founding members of the Art Museum Image Consortium (http://www.amico.org). In 1997, the Minnesota Office of Technology began offering funding to encourage the development of on-line resources. During this year, technology staff from the MIA and Walker met to explore on-line project ideas that might overlap, address State funding requirements, and further bolster each museum's commitment to on-line resources. The Integrated Art Information Access Program, later renamed ArtsConnectEd, was the product of these meetings. Thus the partnership that began with educational resource catalogues was leveraged to create a resource that would eventually provide full educational access to collections and resources of both museums through one Web site.

Technical Grassroots

ArtsConnectEd grew to become a portal to the combined digital resources of the MIA and Walker, including works of art, educational resources, audio, video and text archives and library catalogues. The educational resource catalogues that were the birth of the partnership and funding opportunities offered by the Minnesota Department of Education (now called the Department of Children, Families and Learning), MCI Worldcom™ and the Institute of Museum and Library Services motivated the technologists to consider K-12 educators a primary audience. In 1997, the Minnesota Department of Children, Families and Learning awarded ArtsConnected $1 million to continue its work putting the collections of both museums online.

Both the Walker and the MIA were struggling to address growing demands to put traditional print-based educational resources into the hands of educators, and ArtsConnectEd was designed to provide an unlimited 24/7 means of addressing those demands. By design, ArtsConnectEd was presenting educational material in a new way, and in order to make use of these new on-line resources, the museums quickly realized that they would have to make an investment in helping teachers gain greater confidence and competency in using technology and the Internet. Wiring of schools in Minnesota and nationwide was moving quickly, and ArtsConnectEd developers assumed that access would increase as quickly as new resources were generated. Furthermore, providing rich educational resources on-line would encourage teachers to gain the economic resources, skills, and tools to access them. ArtsConnectEd was able to make a case as an investment in technology and education, and in 1999 ArtsConnectEd received an additional grant of $2 million to continue its work for and with teachers.

Interface Design

ArtsConnectEd began with the idea that using query, similar to Google as the primary interface for searching the collections of both museums, would best serve the audience of K-12 teachers. The wisdom of this design strategy was investigated in 1998 when the usability of an early version of ArtsConnectEd was formally tested. Findings from the usability lab indicated that the search engine interface was problematic for teachers for two primary reasons. First, ArtsConnectEd returned too many disparate results for teachers to make sense of; and second, in 1998 most teachers didn't possess the skills to perform sophisticated searches. Following usabilty testing, technologists began prototyping new interfaces designed to better suit teachers' needs, and enlisted the help of usability experts and the museum educators at both institutions to determine components of the interface. The resulting interface, publicly released in the fall of 1999, incorporated resource-specific queries, wizard/assistants and menus to better meet the needs and requirements of the K-12 educational audience.

Fig. 1: ArtsConnectEd Home page

Management by Committee

As the usage, care and feeding of ArtsConnectEd began to grow, a more formal team structure was needed to set and obtain long-term project goals. Four committees composed of representatives from both the MIA and the Walker were established to achieve these ends: Steering Committee, Technology Committee, Education Committee and Marketing Committee. The Education Committee faced two immediate challenges. First, the Committee was responsible for defining new content and resources to be made available on ArtsConnectEd. Second, strategies were needed to persuade the K-12 teaching community to embrace ArtsConnectEd as a new centralized on-line resource. Recognizing that it wasn't good enough to simply provide the resource, the Education Committee began to explore strategies of training teachers to use ArtsConnectEd.

A State-wide Training Strategy

Equitable distribution

The state of Minnesota is 84,068 square miles and contains 341 school districts to serve a population of 4,610,000. The MIA and Walker are located in the most densely populated urban area of Minneapolis. Both museums distribute educational resources such as slide sets, posters and videos in five regional centers around the state, but the majority of Minnesota educators outside the Twin City area were grossly under-served. The need

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to address the inequities between the Twin Cities and the rest of the state was of primary importance for the ArtsConnectEd Education Committee, as well as the state legislature who wanted their investment in ArtsConnectEd to reach all of Minnesota. In order to secure additional funding from the state, the museums needed to design their teacher training program to impact all of the state of Minnesota.

Part Marketing, Part Training

The ArtsConnectEd Education Committee identified two initial goals for developing a state-wide teacher training program. First, to promote the use of ArtsConnectEd in classrooms around Minnesota, awareness of ArtsConnectEd had to increase. A training strategy that would simply market knowledge of ArtsConnectEd to the largest number of people possible was desirable. Second, the ArtsConnectEd Education Committee acknowledged that teachers would benefit from coaching and support to learn to use ArtsConnectEd. Previous experiences with teachers in advisory groups and workshops for teachers had convinced the Education Committee that teachers find it hard to create time in their regular classroom schedule to learn to use a new resource. Providing teachers time to learn to use ArtsConnectEd in a workshop setting might help address the problems teachers have finding time on their own for such professional development. Teachers also frequently told museum staff that they aren't given adequate support in school buildings or school districts to learn new skills or to learn to use new equipment. ArtsConnectEd teacher training could supply the support that teachers need in their use of technology and relieve school districts of some staff development pressures felt around technology in the classroom.

The Train-the-Trainer Model

The ArtsConnectEd Education Committee began its design of a state-wide teacher training program by considering a traveling resource model such as Plains Rolling Art Gallery (http://www.plainsart.org/education/rpag.shtml) or Experience Music's Electric Bus (http://www.emplive.com/visit/electricbus/index.asp). This approach required that a trainer travel the state providing workshops for teachers in their own communities. However, this strategy had a "here and gone" impact without lasting support, and one trainer could reach only a small number of teachers. The alternative approach of a train-the-trainer model was conceived, using a pyramid system to reach as many teachers as possible throughout Minnesota.

The train-the-trainer model is based on one lead trainer developing a highly skilled core group of teachers from around the state, who would in turn conduct workshops in their regions. After consulting lobbyists and administrators of both museums, the Education Committee chose to recruit a core group of 24 teachers, 18 from around the state and six from the Minneapolis/St. Paul metro area. Members of this core group would contract to teach at least four workshops of 15 teachers each after they were trained, so 24 trainers would workshop 60 teachers each, resulting in a grand total of 1440 Minnesota teachers trained to use ArtsConnectEd in their classrooms during the 2001-2002 school year. Theorizing that each teacher is responsible for at least 30 students during a school year, the Education Committee estimated that students using ArtsConnectEd could reach 43, 200 during 2001-2002.

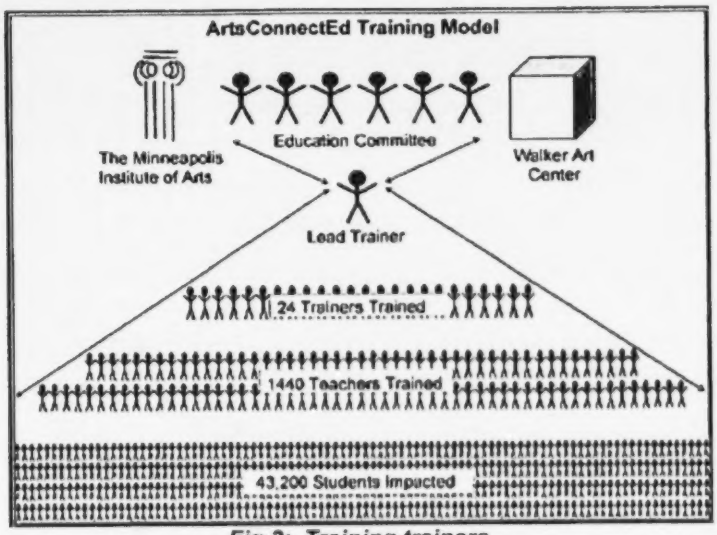

Fig.2: Training trainers

Project Budget

ArtsConnectEd money was dedicated to three primary areas: 1) the continued digitization and conversion of works of art and archives, 2) the development of new content in the form of on-line educational resources, and 3) the statewide teacher-training program.

While the Education Committee conceived the strategies of the overall training program, its design was facilitated through external contractors. Staffing in the figures below is non-museum staffing. Materials for training are included in the cost per trainer.

YEAR ONE;

$5375 per trainer just for training;

$45,100 staffing costs;

$50,000 marketing

YEAR TWO;

$1695 per trainer for workshops

$57,400 staffing costs

ArtsConnectEd Training Plan

Once the model for the training program was determined, the Education Committee examined its resources and decided that each trainer would receive a Macintosh G3 Powerbook computer in order to ensure equal access to standardized equipment and software. The computer would serve as both a tool as well as an incentive when formally awarded to the trainers once they had successfully completed the program. Each trainer would also receive reimbursement for lodging and mileage and a $200 stipend to travel to Minneapolis for three training sessions in 2001. In return, the trainers would commit to use ArtsConnectEd with their students in the classroom, as well as plan and deliver four ArtsConnectEd workshops in their regions during the 2001-2002 school year. Trainers would receive a $200 stipend for each workshop they conducted and an overall expense account of $500. During the two-year training period the trainers would also participate in an on-line threaded discussion list with the lead trainer and each other, as well as participate in an evaluation of the program.

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Lead Trainer

In the summer of 2000, the Education Committee set about crafting a job description and began the search for an ArtsConnectEd Lead Trainer. The job description required the lead trainer to design and deliver a training program that would instruct and support 24 teachers from all parts of the state in conducting ArtsConnectEd workshops for their colleagues in their home regions. The Lead Trainer would be responsible for developing both print and electronic training materials and classroom assessment models, and would moderate the threaded discussion list with the 24 trainers using *WebBoard* software. To simplify the potentially complex reporting structure, it was decided that the Lead Trainer would report to the Director of Education at the Minneapolis Institute of Arts, and attend meetings of the ArtsConnectEd Education Committee. Once the 24 trainers were fully trained, the Lead Trainer would observe the workshops they provided for their peers and work with a contracted evaluator to study the effectiveness of the training program.

The Education Committee identified the following qualifications for the Lead Trainer: 1) a licensed art educator experienced in teaching with technology and in developing online teacher resources; 2) previous experience working with art museums; 3) knowledge of the Minnesota community of educators; and 4) willing to travel to various parts of Minnesota to observe each of the 24 trainers in action. A former MIA Education staff member who was also a licensed art educator was hired. The selected Lead Trainer had previously worked with both museums on ArtsNetMN (www.artsconnected.org/artsnetmn), a joint project involving K-12 education resources delivered over the Internet, and had served as Minnesota's Museum Education Representative on the governing board of the state's professional organization, Art Educators Minnesota, for K-12 art educators. In addition, the selected Lead Trainer had demonstrated experience developing Performance Packages, Minnesota's method for assessing students' fulfillment of the Minnesota High School Graduation Standards.

Because the Lead Trainer was a temporary contract position, the Lead Trainer's relationship to permanent museum staff would need to be a transitional one. The Education Committee recognized the importance of developing a continuing relationship between the 24 teachers and the two supporting museums once the funded training program was completed. To accommodate this transition, each museum selected a member of its education staff to attend all training workshops and work closely with the Lead Trainer to ensure continuity. The Lead Trainer was given a museum e-mail address (acetrainer@artsmia.org) to enable a seamless transition between the temporary Lead Trainer and permanent education staff after training was over. An assistant trainer was identified on staff at the MIA to serve as a liaison between the Lead Trainer and in-house museum services and procedures.

Trainer Recruitment Strategy and Application Process

Once contracted, the Lead Trainer worked with the ArtsConnectEd Education Committee to develop the application procedure for teachers interested in becoming one of the 24 trainers. The Committee decided to target art teachers in their recruitment strategies in order to promote the art education profession in Minnesota. As in other areas of the country, art education is often the first to be cut in times of tight budgets. In Minnesota, many elementary schools go without art specialists, leaving classroom generalists with little training to fill the bill. The Education Committee

reasoned that recruiting art specialists to become ArtsConnectEd experts would be a statement of support for the profession and a leg up for art specialists who were often shut out of access to technology in favor of more "technical" subject areas like business or science.

Another consideration for the Education Committee was whether to target teachers who needed education in technology and inspiration to use technology in the art classroom, or to target those teachers who were already technology savvy and had demonstrated leadership in the field. Although the pros and cons for each recruitment strategy made sense, in the end the Education Committee chose to recruit leaders in the field, hoping to inspire others through the examples set by the trainers.

The Education Committee wanted to develop an application package that would fully inform applicants of all aspects of the program, and at the same time wanted to avoid handing out packages that would be discarded by teachers who didn't qualify or weren't interested once they realized the necessary commitment. To address this concern, a two-step application process was developed in which an applicant formally requested an application package, and then completed the application. The following advertisement was placed in folders handed out at the fall conference for Art Educators of Minnesota. It was also sent to the state's mailing list of art educators and the state's Best Practices Network, a group of 50 arts teachers assembled from all over the state who are knowledgeable about the research on best practices for effective teaching and learning in the arts.

> Wanted: ArtsConnectEd Trainers
>
> Creative and experienced teachers are wanted to train colleagues to use the online art resources found in ArtsConnectEd in classrooms throughout Minnesota. ArtsConnectEd is a partnership between The Minneapolis Institute of Arts and the Walker Art Center that provides Internet access to the rich collections and educational resources of both institutions through one shared Web site. Using the power of the Internet to stimulate new approaches to learning, the goal of ArtsConnectEd is to help make arts education timely, engaging, interactive, and pertinent for both teachers and students of all ages. The goal of this project is to create a community of teachers and learners who are able to use web-based arts resources creatively and effectively.
>
> ArtsConnectEd trainers commit two years to this training project, agreeing to complete 3 one and one-half day training sessions in the Twin Cities during the first year (travel stipend provided). Year two requires trainers to organize and teach a minimum of 4 three-hour workshops to teachers in greater Minnesota. 12 qualified teachers who represent diverse Minnesota regions will receive Macintosh G3 Powerbook laptop computers, $600 stipends for year one and $200 stipends for each workshop taught during year two, plus a $500 materials budget.
>
> Applicants must have demonstrated experience teaching art in a classroom setting (grades 4 -12) and demonstrated experience with computers and Internet technology including access to an Internet Service Provider. Evidence of professional leadership and a letter of support from school

administrators is also required. For application materials, contact:...

The Minnesota Department of Children, Families & Learning through an appropriation by the Minnesota State Legislature is a major funder for many of the resources that have been developed for ArtsConnectEd.

The application packet (see Appendix A) consisted of a letter detailing the commitment a trainer would need to make if selected and the application procedure. In order to ensure that applicants had the blessing of their school administrator, a letter of support was also required with the completed application. School support was considered crucial, since selected teachers would require substitutes on days when they were teaching workshops in other parts of their communities. The application form required applicants to specify which grades they taught. The Education Committee had determined that trainers would be chosen from those teaching grades 4-12 since ArtsConnectEd wasn't designed for use by preschool children or the very young grades K-3. Thus an art teacher responsible for grades K-6 in a large elementary school fit the target applicant profile more than a teacher responsible for grades K-4 in a smaller school.

In order to gauge an applicant's familiarity with art museums and the resources they provide for teachers, a question was included on the application regarding the teacher's prior experience with museum educational materials. The applicant's demonstrated leadership history was required in terms of memberships in professional organizations and awards or honors, as well as a short essay outlining their philosophy in regard to the integration of technology in classrooms. A series of questions was included about how often the applicant used the Internet to determine the applicant's comfort and familiarity with Internet resources. Finally, each applicant was also required to sign a statement saying that they read and understood the job description, to avoid having applicants who later withdrew over misunderstandings regarding what was required.

Trainer selection

150 requests for applications were received by the December 1, 2000 deadline, and 89 completed applications were received by the December 15, 2000 deadline. Each application went through an initial screening process in which applicants who didn't fit the recruitment criteria of teaching in grades 4-12, and applicants who indicated that they never used museum resources or never used the Internet, were eliminated. The geographic "home" of the remaining applicants was plotted on a map of Minnesota. The Education Committee met and reviewed the remaining applications, choosing 24 based on the criteria of geographic location, qualities of leadership, experience training teachers, and on the essays regarding the use of technology in the classroom. As a final check, at least one of the two references listed on each of the 24 finalists' applications was contacted. The applicants who were not selected were sent "thank you" letters and a gift of catalogues of the MIA's collection and the Walker Sculpture Garden.

All 24 ArtsConnectEd trainers said in their application essays that technology was essential in bringing museum resources to classrooms that otherwise would not be able to take advantage of the museum and all it has to offer, due to economics, geography or both.

The 24 trainers selected hailed from all over the state of Minnesota with the exception of the very southwest corner (a trainer later moved to this area in a job change that began in the 2001-2002 school year). 18 trainers represented non-metro areas and 6 trainers represented the Twin Cities and surrounding suburbs. Among the ranks was the president of the state's professional organization for art teachers and an art history teacher from the Perpich Center for Arts Education, an arts high school serving 11th and 12th grade students from all over Minnesota. The group represented a distribution of elementary, middle and high school art teachers. All were informed at their first training meeting in February 2001 that they would be required to sign a contract with ArtsConnectEd (see Appendix B) for their work over two years.

Fig.3: State of Minnesota with each dot representing one of 18 out-state trainers

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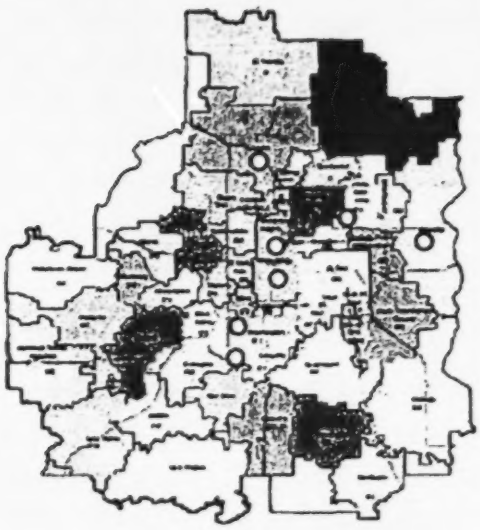

Fig: 4: Minnesota metro area with each dot representing one of 6 trainers

The Marketing Plan

A marketing firm was hired to develop a marketing plan and materials for ArtsConnectEd teacher-training during year two when the trainers were in the field teaching their workshops. An ArtsConnectEd poster and three-ring-binder were developed before the 2001-2002 school year began, enabling trainers to use posters to market workshops and binders to be filled with customized material for each workshop. A media kit was developed and the marketing firm tracked the workshops as they were scheduled on the threaded discussion list. As each workshop was scheduled, the marketing firm sent a media kit to the host community's press.

Program Goals

Once the 24 trainers were selected the Education Committee interviewed and contracted an evaluator specializing in outcome-based evaluation to design an evaluation of the train-the-trainer program as well as one for the workshops the trainers would teach in year two. The evaluator helped the Education Committee and the Lead Trainer identify the following overall goals for the training program: 1) create a collaborative laboratory for exploring meaningful classroom applications of on-line teacher resources; 2) create a community that will sustain the use of on-line teacher resources throughout Minnesota; 3) build bridges between the cultures of the classroom and

Reality Check

Despite the rigorous screening process when the 24 selected trainers were notified of their acceptance one teacher revealed that she didn't know her e-mail address because the school secretary had completed the application for her. Later when the training began it was discovered that one of the trainers who represented herself as an art teacher was, in fact, a social studies teacher. Despite these potential setbacks, both of these teachers remain in the program and have

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the art museum; 4) increase the sophistication of teachers' use of on-line teacher resources; and 5) expand teachers' use of technology in general.

been successful.

Training the Trainers

Session One

Goals for Session One

1. Increase trainers' computer competence, particularly with their Macintosh Powerbooks
2. Effectively communicate the basic structure and uses of ArtsConnectEd.
3. Build a learning community between the two subgroups of twelve trainers.
4. Begin to build bridges of understanding between the cultures of the museum and the classroom.
5. Promote an attitude of professionalism and accountability
6. Acquire trainers' commitment to use of threaded discussion list software
7. Reinforce the trainers' commitment to use ArtsConnectEd with their students.

In February of 2001the trainers arrived at the MIA for their first one-and-a-half-day training session. The group of 24 had been split into two groups of 12 to allow for more individual contact time with the Lead Trainer. Each group of 12 would remain together throughout the training in an effort to build community among the trainers. To promote a professional attitude, business cards were made for each trainer and were placed at their seats along with the agenda for the session and the contracts they were required to sign (Appendix B). The following trainers' version of the goals for ArtsConnectEd teacher training was reviewed with the group:

After completing three training sessions in 2001 ArtsConnectEd Trainers will:

1. create an ongoing collaborative laboratory in which criteria for effective classroom use of ArtsConnectEd is discovered, developed, discussed and tested.
2. work as a team to create and evaluate 24 classroom tasks that demonstrate effective classroom use of ArtsConnectEd.
3. increase technological proficiency and aptitude to advocate for increased access to art resources and technology in K-12 classrooms.
4. develop skills that provide leadership in arts education in Minnesota.

In addition, trainers were informed that over the course of their training they would work with the Lead Trainer to build a "tool kit" containing skills, materials and resources that they could later draw upon to create effective, high quality workshops for their peers in year two. Once the "house-keeping" was out of the way, the computers were distributed and the rest of the day focused on a series of activities aimed at building overall computer confidence and increasing trainers' familiarity with the specifics of their new tool. One of these exercises included the installation of additional memory, previously purchased for each computer but left for the trainers to install. Each trainer was taught to remove the laptop's keyboard and install the new memory in the machine. This "under the hood" experience proved a powerful icebreaker, and anyone who was intimidated by the new computer

before this experience felt a much greater sense of technical confidence.

Fig.5: Trainers install memory in their new computers

Day two began with breakfast and a question and answer session at the Walker Art Center. Mid-morning, the trainers moved back to the MIA to learn how to configure their computers to access the Internet via both network and dial-up connections. Development of on an on-line ArtsConnectEd tutorial had begun prior to the first training session and the trainers were asked to beta test the program while simultaneously learning about ArtsConnectEd. After lunch the trainers were provided with a field trip behind the scenes at the museum where they followed a work of art from the galleries to the digital photography studio to the computer where the metadata related to the digitized image was input for inclusion in the ArtsConnectEd Web site.

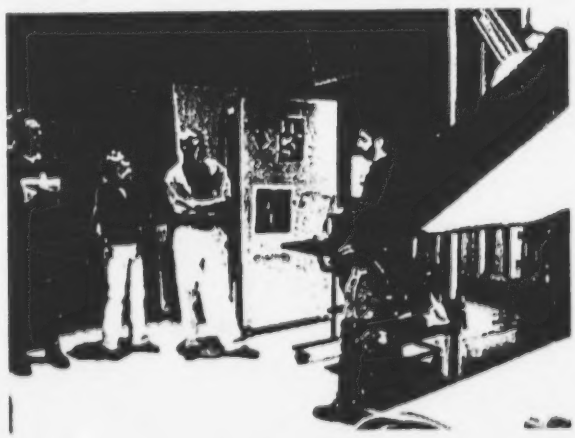

Fig. 6: Trainers visit the MIA's digital photography studio

Beyond providing an in-depth understanding of the internal work process behind ArtsConnectEd, this experience helped cement the trainers'

relationship with the museum, making them feel more like museum staff and less like outsiders looking into ArtsConnectEd. Back in the classroom trainers were taught to use ArtsConnectEd's threaded discussion list software (*WebBoard*) and received their assignments for the period until the next training session: use ArtsConnectEd in the classroom with your students, and report to each other about your trials via the threaded discussion list.

Session Two

Goals for Session Two

1. Continue to build bridges of understanding between the cultures of the museum and the classroom.
2. Develop criteria for effective classroom use of ArtsConnectEd based on classroom trials with students.
3. Brainstorm a list of task ideas with trainers based on classroom trials with students.
4. Align task ideas with the Minnesota Graduation Standards using SPACE chart tool.
5. Communicate a procedure for each trainer to write a draft of a task using ArtsConnectEd in a K-12 classroom.

Session two of ArtsConnectEd training began in March of 2001 with a tour of the art storage vaults at the MIA. The MIA Registrar who lead the tour introduced the trainers to the vast holdings of the museum that were not on public view but only available via electronic access. This exercise helped reinforce the unique entrance that ArtsConnectEd provides to the entire collection, well beyond the 3-5% of works currently hung on the gallery walls. The Registrar also provided the trainers with information about the lengths that museums go to in order to properly preserve and care for works of art. The experience furthered the goal of immersing the trainers in the mission and culture of museums. Following the tour, each trainer reported on classroom trials with ArtsConnectEd, and several had related student work to share.

The second goal for the trainers: "work as a team to create and evaluate 24 classroom tasks that demonstrate effective classroom use of ArtsConnectEd" was introduced with a definition of a "task." The Lead Trainer had considered that several tasks might be bundled to create a Performance Package, the assessment tool used by the state to determine whether students were meeting Graduation Standards. (Minnesota has since abandoned Performance Packages as its mandated assessment tool, leaving individual school districts to decide on or design tools to measure student achievement.) The task format allowed for the creation of smaller, more manageable units of instruction than traditional lesson plans. A task form was developed and explained so trainers would be familiar with the end product of their goal.

Trainers brainstormed ideas for tasks based on their trials with ArtsConnectEd in the classroom. Once an initial list had been developed, the evaluator led the group to determine criteria for an "effective" classroom task. Trainers discussed and determined the following criteria:

1. ArtsConnectEd is required to complete one or more components of the classroom task.
2. Classroom learning outcomes are evident in the task.
3. All tasks are aligned to the Minnesota Graduation Standards.

4. All tasks can be assessed.
5. Use of ArtsConnectEd in the task is planned for a range of available technology.
6. Some tasks are designed to accommodate a diverse range of learners.

Fig.7: Trainers use Post-It notes to brainstorm task ideas

Once the criteria were agreed on, the group measured each task idea against the criteria and revised or discarded task ideas that didn't measure up. To determine whether tasks aligned to the Graduation Standards (criteria #3), the large group split into smaller groups with SPACE charts for each of the learning areas such as math, inquiry, history, etc. SPACE stands for "Some Processes and Concepts," a series of skill sets developed by the State of Minnesota to represent for teachers the necessity to teach students *how* to think about a topic area rather than *what* to think. Each group took a set of task ideas and attempted to place them in the appropriate grade level and learning area on SPACE charts designed especially for this activity. (See Appendix D) If the trainers could find a solid fit between a task and a SPACE Chart, the task was considered aligned to the Graduation Standards.

A final list of all task ideas that met all of the defined criteria was placed on the threaded discussion list after trainers returned to their schools, and each trainer signed up to formally write up one task in the predetermined form. Once all the trainers adopted a task idea to write about, each received a blank task form, a set of written instructions for completing the task form, the SPACE chart that accompanied the task they selected, and a sample completed task form. (Appendix D) Trainers were instructed to bring a final task draft to their final training session in June to be critiqued by the group.

Session Three

Goals for Session Three

1. Continue to build bridges of understanding between the cultures of the museum and the classroom.
2. Evaluate 24 classroom tasks that demonstrate effective classroom use of ArtsConnectEd.
3. Demonstrate set-up and use of LCD projector.
4. Define role of ArtsConnectEd trainers in marketing plan.

5. Define procedures for reporting on workshops completed during year two.

Session three of ArtsConnectEd training began in June of 2001 with a tour of the archives at Walker Art Center. The archives house documentation of works of art over the history of the Walker, including artists' models, film, video and audio recordings of performances, correspondence concerning commissioned work or artist residencies, etc. Next, trainers attended a briefing session with the marketing firm hired to promote ArtsConnectEd throughout the state during year two. The marketing firm set up procedures to call attention to trainers' activities around the state, and presented the designs for binders, the press package and the ArtsConnectEd poster they had prepared for trainers' use.

Fig.8: Trainers review resources in their final training session

That afternoon, the trainers received instructions on care, use and shipping procedures of two LCD projectors purchased for trainers to use in their workshops. A reservation system was set up using the threaded discussion list, where trainers would schedule shipment of the projectors to workshop sites. On day two of the final training session, each trainer distributed copies of the task they had written for group feedback. Following the group discussion, each trainer had two weeks to make final revisions based on the group feedback and submit the final written tasks. Over the summer, an editor edited the tasks and a graphic designer laid out any accompanying handouts. These final versions were compiled in an on-line database that the trainers accessed beginning in the fall of 2001. The trainers could print any of the 24 tasks via the database for distribution in their ArtsConnectEd workshops.

Procedures for reporting were discussed and a list of all the tools the trainers had acquired over the course of the training was distributed as a reminder of the resources they could draw upon once they were out in the field giving workshops (see Appendix E). At the conclusion of the session a special ArtsConnected summer conference was announced. This one-day conference would serve the purpose of uniting the two groups of 12 trainers for the first time as well as teach skills that were beyond the scope of ArtsConnectEd, such as basic Photoshop and Web site design.

The Evaluation

A three-prong evaluation plan was developed for assessing the effectiveness of training the trainers. First, a pre-survey and a post-survey were developed to measure the growth of the 24 trainers' skills before and after their training. Second, an observer recorded the instructional techniques used and their effectiveness, during each of three training sessions. Third, after each session, the trainers were asked to reflect on and evaluate their training by answering questions on the threaded discussion list. All of the results from each session were compiled, analyzed and shared with the trainers to enable them to make use of what was learned in the evaluation when constructing their own workshops.

Survey Results

The pre- and post-surveys measured quantifiable skills, and the results from those surveys showed that the trainers acquired the skills they needed to successfully transfer their knowledge of ArtsConnectEd to other teachers. Above all, the survey showed that Art Collector, a tool in which users build their own art collections, saw the greatest growth in use over the course of the training period. (See Appendix C)

Observation Results

The observers at each training session identified the following teaching techniques over the course of the trainers training:

1. Observing a demonstration
2. Clicking along on your own while the instructor provides instructions
3. Group Show and Tell Presentations (trainers share their own experiences)
4. Handouts (paper and electronic)
5. Field trips out of the classroom for a behind-the-scenes museum experience
6. Group discussions
7. Hands-on knowledge and skills gained (as in installing computer memory)
8. Electronic ArtsConnectEd Tutorial
9. Modeling a process
10. Cooperative learning where trainers teach each other
11. Group Critiques
12. Lecture

Results from Questions on the Threaded Discussion List

The list of teaching techniques above was posted on the threaded discussion list and trainers were asked to identify which technique or set of techniques helped them learn the most. They responded that the combination of ALL techniques used was most effective. The training observers confirmed this finding by tracking the level of the group's engagement throughout all of the techniques. When techniques were varied, most of the group was engaged and on task. The trainers concluded that effective workshops make use of all techniques so that all learning styles are addressed.

In response to questions about what worked well during their own training, trainers identified learning computer tricks such as keyboard shortcuts and search tips as one of the ways that their confidence as computer users was increased. Their confidence as museum users increased when behind-the-scenes information was shared. These two techniques combined and

repeated over time resulted in the trainers becoming more confident ArtsConnectEd users.

Using handouts was also emphasized as a powerful teaching tool, one that addressed different learning styles and provided backup for information given in instruction. Trainers used handouts most often to review information or look up instructions after training, and many said that they just didn't "get it" until they were able to see it on paper. In fact when trainers were asked what could have been done to improve their own training experience, the response was "more handouts!" The Education Committee had developed a written and illustrated full-color Teacher's Guide to ArtsConnectEd before the teacher-training program began, and trainers embraced this guide as a basic handout for all their workshops. (Download the guide at http://www.artsconnected.org/classroom)

When the trainers were asked what was learned using ArtsConnectEd in their own classrooms, they reported that students were impressed that the works of art they were seeing on-line could be found in their own state. Since ArtsConnectEd training was taking place statewide, all the trainers began to emphasize that works of art were in Minnesota museums and students responded with excitement. A number of trainers from outside of the Minnesota metro area reported that some of their students influenced their families to travel to the Twin Cities just to see the original works of art they had studied in class.

Once trainers were introduced to ArtsConnectEd in session one of their training, the Lead Trainer began to put scavenger hunts in the threaded discussion lists, requiring trainers to conceive of sophisticated search strategies to solve specific problems. The trainers identified this opportunity to practice searching as an essential element that helped them become more advanced ArtsConnectEd users overall. Providing opportunities to practice searching was also a technique they considered essential to effective workshops.

When asked to pinpoint times when they were most engaged, trainers recalled the periods when they were able to interact with and learn from each other. Making meaning relate to students at a personal level has long been a goal of expert teachers. Tasks and rewards that were meaningful personally as well as professionally were also identified by the trainers as influential teaching tools. Finally, the trainers articulated importance to their overall sense that museum staff and the Lead Trainer treated them with respect and thought of them as professionals. Often the trainers said they strove to behave more professionally because they were treated as professionals.

There seems to be a significant difference in the minds of students to art that is out there in cyberworld and actual examples of art at a local museum. For my students, Internet searches were about an idea of art or an artist and were not concrete. Now, with ACE, the artwork and information is attached to a real place, just posted for access on the web. It is perhaps subtle but very significant for their understanding. – Kevin Langmaack, ArtsConnectEd Trainer, White Bear Lake, MN

Task Evaluation

The 24 tasks written by the ArtsConnectEd trainers were evaluated by a team consisting of the evaluator, Lead Trainer, and an education staff

member from the Walker and the MIA. The evaluator designed a rubric based on the criteria for effective classroom tasks (see session two), and three members of the evaluation team scored each task.

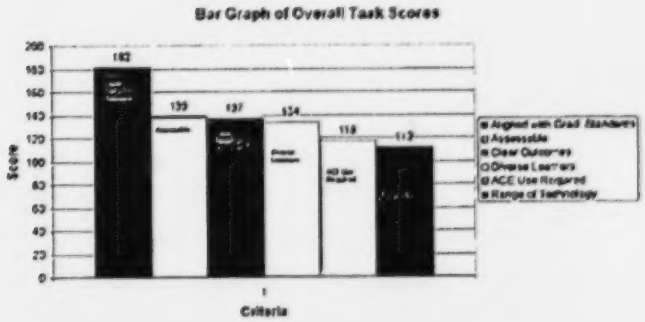

Fig. 9

The resulting scores show that the tasks scored highest in aligning with the Graduation Standards, an exercise that included using a concrete, hands-on tool. The evaluation team was disappointed that the tasks did not score higher on other criteria, and they also expressed the sentiment that overall many of the tasks did not meet museum educators' idea of quality activities. The educators on the evaluation team who had previous experience working with teachers writing museum materials cited similar disappointments in the past.

You guys have done a lot to make us, the presenters, look and feel very professional. As I have said all along, all of you have cared a great deal for us and made us feel very special, a feeling not always granted to us as teachers, 'specially in the arts field. Thank you and all your crew for making this experience one of the best in my teaching career. – Jeff Pridie, ArtsConnectEd Trainer, Faribault, MN

One theory as to the perceived short-coming of the teacher generated tasks was cultural differences. Classroom teachers are naturally focused on process, switching strategies and changing techniques as a result of the instant feedback they get from students to find "what works." Thus there is a focus on what works in the classroom, not how that process is expressed in a written document. On the other hand, museum educators function in an environment based on academic tradition, where an end product like a research paper or exhibition represents the process that created it. Museum educators respect editorial feedback and go through many revisions and discussions about semantics in order to achieve a final product they can be proud of. Because these two "cultures" are so disparate, the Education Committee wondered if the idea of requiring teachers to achieve museum standards of "quality" was misguided. While the discussion is still taking place, one conclusion is that there needs to be more thought about museums respecting teachers and the culture they practice in, not expecting teachers to understand or embrace museum culture.

Evaluating Trainers' Workshops

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The evaluation of the trainers' workshops was conducted via a two-page survey that the trainers required their workshop participants to fill out and hand in at the end of each workshop. In addition, each trainer was required to reflect in the threaded discussion list on what went well and what could have gone better during each workshop. The evaluator designed a follow-up phone interview for a random sample of those who attended ArtsConnectEd workshops, to be conducted in February of 2002, to determine the effectiveness of the workshops in creating ArtsConnectEd users. The data collected to date has been distributed to trainers so they can make use of it in their future workshops in 2002. The data also will be used in planning future ArtsConnectEd initiatives with teachers.

To date there have been 100 workshops scheduled for the 2001-2002 school year, and 75 of those have already taken place. Many trainers used contacts they had in their areas to schedule workshops during the school district's staff development days, while other trainers took advantage of events already planned such as state conferences that accepted proposals for presentations. Almost all trainers have planned workshops for other staff in the buildings where they teach, and every college in the state that graduates teachers has been contacted with great success with offers of training pre-service teachers. Over 700 people who have attended workshops filled out evaluation forms, and the data has been very positive: 99% say they have acquired the skills and knowledge they need to use ArtsConnectEd, and 73% say they acquired the skills and knowledge they need to use ArtsConnectEd in their classrooms. A full summative analysis of the outcomes of these workshops will be developed in fall of 2002.

Looking Ahead

Museum Fellowships

In the spring of 2002, ArtsConnectEd trainers will have an opportunity to apply for two summer fellowships to develop and complete individual projects related to the goals of ArtsConnectEd and technology use in K-12 art classrooms. The application process will allow the ArtsConnectEd Education Committee to choose two projects they feel will benefit the museum's programs while simultaneously strengthening the fellows' understanding of art museums and their role in the education community.

Higher Education Symposium

ArtsConnectEd will also seek to partner with a Minnesota College or University to host a symposium on the use of Web-based resources in K-12 education for all faculties of Minnesota colleges where teachers are educated. The goal of the symposium will be to continue to challenge Minnesota colleges to produce teachers who are prepared to advocate for and take full advantage of technology-rich classrooms in the future.

Advanced Regional Workshops

All Minnesota teachers who attended one of the teacher-trainer's ArtsConnectEd workshops during the 2001-2002 school year will be invited to one of three regional ArtsConnectEd workshops in the 2002-2003 school year. Designed by museum staff, these workshops will take ArtsConnectEd users to advanced levels, building on skills learned from the teacher-trainers.

Possibilities for continued or expanded training continue to be explored.

While art teachers are perhaps best equipped to understand the value of art museums, there are many potential interdisciplinary applications of ArtsConnectEd. Art teachers require in-depth understanding of other disciplines to be able to teach to teachers of other disciplines. Expansion of teacher training might mean exploring interdisciplinary work with teachers other than art teachers.

Lessons Learned

While the ArtsConnectEd Education Committee is still analyzing the teacher training and formulating what has been learned, some initial lessons can be brought to light. Teachers are in great need of continuing professional development when it comes to using technology in the classroom. ArtsConnectEd trainers were selected for their familiarity with technology; even so, they demonstrated during their training sessions that their knowledge, skills and confidence in working with technology were very diverse. This diversity of skills was what drove the need for a wide range of instructional strategies and techniques. Museums would do well to consider this diversity in skills when developing on-line resources, by designing a range of tools and interfaces for accessing electronic materials.

Giving ArtsConnectEd trainers a look behind the scenes of the museum created dedicated fans who delighted in discovering and exploring all the roles that art museums play. Many of the trainers said that their students anxiously awaited their reports concerning new facts uncovered and new secrets revealed about storing, caring for, collecting and displaying works of art. Art museums might have great success making new connections with current visitors and potential visitors by revealing more of the inner workings of the museum to an obviously fascinated public.

Teachers need to be considered professionals, but unfortunately they aren't always treated that way. ArtsConnectEd staff learned that when teachers are treated as professionals, they become more committed, more enthusiastic and more willing to go the extra mile for their students – whoever their students are. Supplying teachers with up-to-date materials, professionally produced, and expecting professional behavior created an atmosphere of respect and dedication among the ArtsConnectEd teacher-trainers.

Different from traditional prepackaged tours, reproductions and materials, comprehensive on-line resources, particularly those providing access to the museum's collection, provide a drastically new paradigm for art educators incorporating the arts works into many aspects of daily classroom life. Watching teachers learn to use ArtsConnectEd became like watching teachers and students use a doorway from the school into an art museum. But on-line museum resources like ArtConnectEd can be more flexible for teachers than an art museum. In ArtsConnectEd it is possible to search through storage, organize your own exhibition and write your own labels. Giving teachers museum materials has always been a good idea, but giving teachers tools to access museum collections and all they have to offer provides a more powerful connection.

Finally, as for the train-the-trainer model itself, while the number of teachers and students impacted is impressive in its own right, the long-term impact has yet to be measured. The ultimate goal of sustained and meaningful use of ArtsConnectEd in classrooms across Minnesota as a result of workshops offered by the ArtsConnectEd trainers seems within reach, but documented attainment of that goal is in the future.

Fig.10: ArtsConnectEd trainers conducting a workshop at the Minnesota Department of Children Families and Learning

Appendices

A.1- Applicant Welcome Letter (PDF)

A.2- ArtsConnectEd Trainer Job Description (PDF)

A.3 - ArtsConnectEd Trainer Application (PDF)

B - ArtsConnectEd Trainer Contract (PDF)

C - Survey Data Summary (PDF)

D.1 – Artsconnected Task Database

D.2 – Artsconnected SPACE CHART

E - Trainer Resources and Materials List

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

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